

New and little known armoured Scales (Homoptera: Diaspididae) from South Africa - 1

by

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Recently the author was privileged to go on collecting trips to various parts of the Republic during which a number of interesting coccoids were found. Among the diaspidids collected are several new species and species imperfectly known from the original records. In the present paper a start is made on elucidating the identity of the latter as well as describing the new species discovered.

Slides and paratypes of the species dealt with in this paper are deposited in the British Museum (Natural History) London, and the United States National Museum, Washington; holotypes, paratypes and the remainder of the material are in the National Collection of Insects, Pretoria.

For brevity the average values follow the range of variation in parentheses.

Dentachionaspis capparisi (Brain) **comb. nov.**, fig. 1

Chionaspis capparisi Brain, 1919, *Bull. ent. Res.* 9: 233.

"The female scale is about 2.2 mm. long, comparatively wide for its length, moderately convex, widest about the middle, clean specimens appearing slightly glossy but felted. Exuviae brown. In some cases the second exuviae appear to be covered with a very slight film of whitish secretion, but as a rule they are naked. Male puparium white, non-carinated, exuviae yellowish or yellowish-brown." (Brain, loc. cit.).

The following description has been drawn up after a re-examination of Brain's material.

Mounted adult female fusiform, prosoma sclerotized, length 1.0-1.7 mm, width 0.5-0.8 mm. Antennae with two to three hairs. Anterior spiracles with 5-11 (7.2) trilocular parastigmatic pores, posterior spiracles with 1-4 (2.0). Pygidium sclerotized. Two pairs of lobes present: median lobes small, conical, pointed, with smooth or notched sides, well separated by a shallow notch, in some specimens apparently yoked by a sclerotic band which is completely lacking in others;

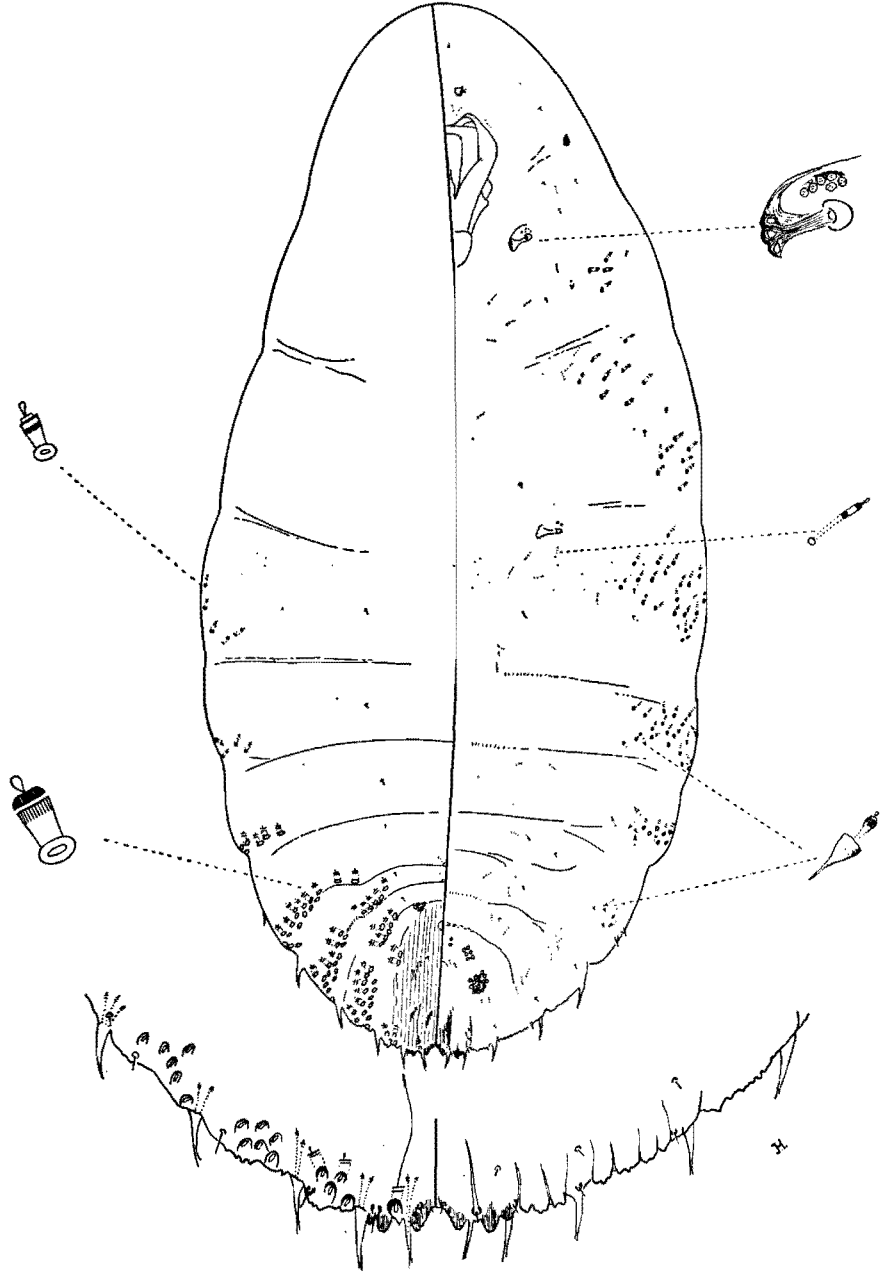


Fig. 1. *Dentachionaspis capparisi* (Brain).

second lobes larger than median lobes, duplex with inner lobules bigger than the outer. Pygidial gland spines arranged singly though sometimes two occur on segment IV, length 17-32 μ , the longer ones being those on the anterior pygidial segments, each provided with one to three microducts and usually very finely branched apically. Ventral gland tubercles few in number and distributed as follows: prothorax, 0-2 (0.9); mesothorax, 0; metathorax, 0-2 (0.5); abdominal segment I, 1-4 (1.9); II, 3-8 (5.5); III, 5-11 (8.5). Dorsal macroducts on segments III-VI arranged in submarginal and submedian series numbering as follows: segment III, submarg. 12-22 (16.4), submed. 1-6 (3.3); IV, submarg. 9-21 (17.4), submed. 4-8 (6.2); V, submarg. 11-19 (15.3), submed. 4-9 (6.3); VI, submarg. 2-4 (3.2), submed. 1-4 (2.8). On segment VII there is one marginal macroduct between the first and second lobes which alone has a long slender microduct (40-48 μ) on its capitate head, in one specimen the submedian series on this segment is represented by a single duct; anterior to segment III the submedian series are lacking and the submarginal ducts become smaller and displaced to the venter. Perivulvar pores in five groups: posterior laterals, 5-15 (11.5); anterior laterals, 2-9 (5.3); median 1-6 (3.4). Preanal scars present, anal orifice towards base of pygidium.

MATERIAL EXAMINED: Three of Brain's slides containing 10 specimens and bearing the following information were studied: "146 C.K.B., *Chionaspis capparisi* Brain. On *Capparis albitrunca*. Cape Peninsula? C. Fuller 1898". Supplementary slides were made from dry material on a card bearing the following data: "146 *Chionaspis capparisi* Brain." which is probably part of the original material.

NOTES: In his monograph Hall (1946) says: "*Chionaspis capparisi* has not been seen, but it seems probable that it also should be included in this genus". Although the median lobes sometimes appear to be yoked, the other pygidial characters support its placement in the genus *Dentachionaspis*.

Furcaspis charmoyi Brain, fig. 2

Furcaspis charmoyi Brain, 1918, *Bull. ent. Res.* 9: 138.

Scale of adult female subcircular, convex, with exuviae towards the periphery, "yellow-brown to dark-brown often tinged with a greenish colour" (Brain, l.c.). Male scale more or less oval, similar in colour to that of the female, and with an apical exuviae.

Mounted female obovate, length: 0.6-0.9 mm, width: 0.5-0.6 mm, prosoma and pygidium heavily sclerotized at maturity; six long ventral fronto-antennal setae occur between the antennae, six hairs also present on each antennal tubercle; thoracic tubercle absent; dorsal submarginal eye-spots present; spiracles conspicuous and heavily sclerotized, anterior pair provided with a scattered group of 13-20 trilocular pores; ventral microducts on thoracic and abdominal segments with a definite distribution pattern as indicated in figure 2; conspicuous conical

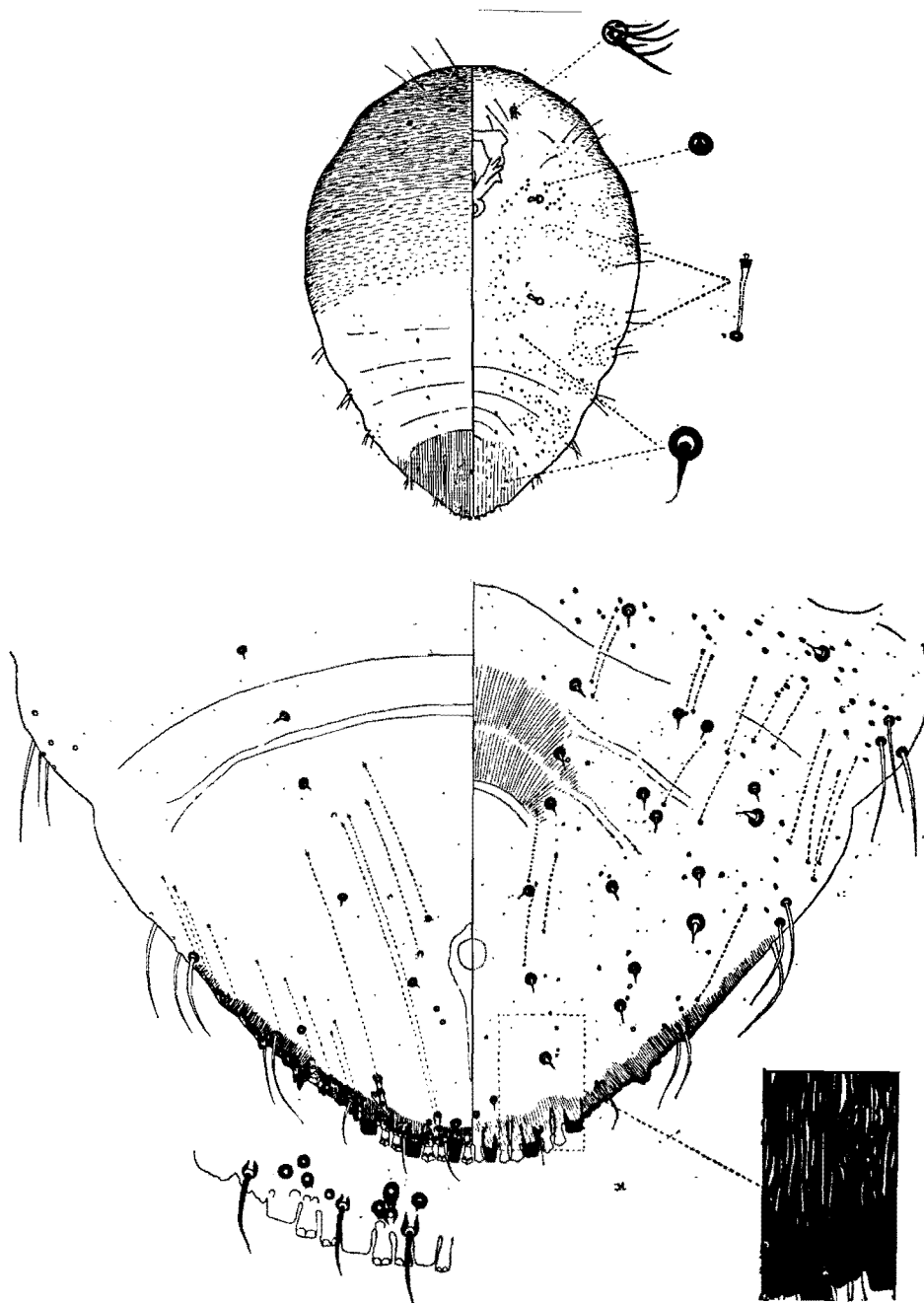


Fig. 2. *Furcaspis charmoyi* Brain.

setae occur on the thoracic, abdominal and pygidial segments which taper to a thin delicate filament; margin of segments V - VII heavily sclerotized and of V-VI denticulate. Three pairs of lobes present: first pair rectangular, longer than wide, slightly divergent, second almost square, third broader than long. Plates occur in pairs between the median, median and second, and second and third lobes; all similar, the lateral and exterior ones somewhat broader than those between the median lobes, each plate faintly trifurcate with two ducts opening apically. Dorsal pygidial ducts few in number, very slender and inconspicuous, their orifices small and surrounded by a sclerotized rim; numerous ducts open dorsally in the sclerotized marginal area. Dorsal marginal setae on segments VI-VIII stout, characteristically curved and longer than the median lobes; the ventral ones very slender and inconspicuous. Vulva towards base of pygidium, anus subcentral; perivulvar pores lacking; venter of pygidium with a characteristic sculpture and dorsum strongly striate.

MATERIAL EXAMINED: Twelve specimens mounted from dry material found in the Brain collection bearing the following information: "*Aspidiotus cladii* Mask. Mauritius, det. de Charmoy rec'd Feb. 1915". Later was added in a different ink but also in Brain's writing "*Furcaspis charmoyi* Brain on Palm". Sixteen specimens from an unidentified palm in Durban (Natal), 2.II.1962 (H.C. 1128), leg. J. Munting and ten on the same tree at the writer's request on 1.X.1963 (H.C. 1294), leg. E. D. Thomas.

NOTES: This species is certainly not congeneric with the type species, *Furcaspis biformis* (Ckll.), and seems to have closer affinities with the genus *Seperaspis* MacG., but as it also differs in certain important characters from the type species of the latter, no change in generic assignment is made at this stage.

***Rolaspis incisa* spec. nov., fig. 3**

Scale of adult female white, elongate, broadening posteriorly, about 2.8 mm long; exuviae thin and very pale yellow. Male purparia white, elongate, noncarinate with a thin opaque exuviae situated at the anterior extremity; found in clusters on the undersides of the leaves and covered with fluffy wax.

Mounted adult females fusiform, membranous except for pygidium; length: 0.6-1.3 mm. Antennae with a single hair. Anterior spiracles with 1-7 (3.9) trilocular parastigmatic pores, posterior spiracles without. Eyespots present on the lateroventral sides of the head; dorsal submarginal bosses on the prothorax and abdominal segments I and III. Pygidium with two pairs of lobes: median lobes not projecting much and with a deep notch between them, yoked by a sclerotic band, apical margin serrate and sloping outward; second lobes bilobulate, rounded, inner lobule largest and may project beyond the median lobes. Pygidial gland spines arranged singly and 15-27 μ in length; ventral gland tubercles occur as follows: prothorax, 0-4 (0.5); mesothorax, 0-2 (0.7); metathorax, 1-5 (2.3); abdominal segment I, 3-9 (5.6); II, 3-10 (6.5); III, 4-8 (5.5); IV, 1-2 (1.9).

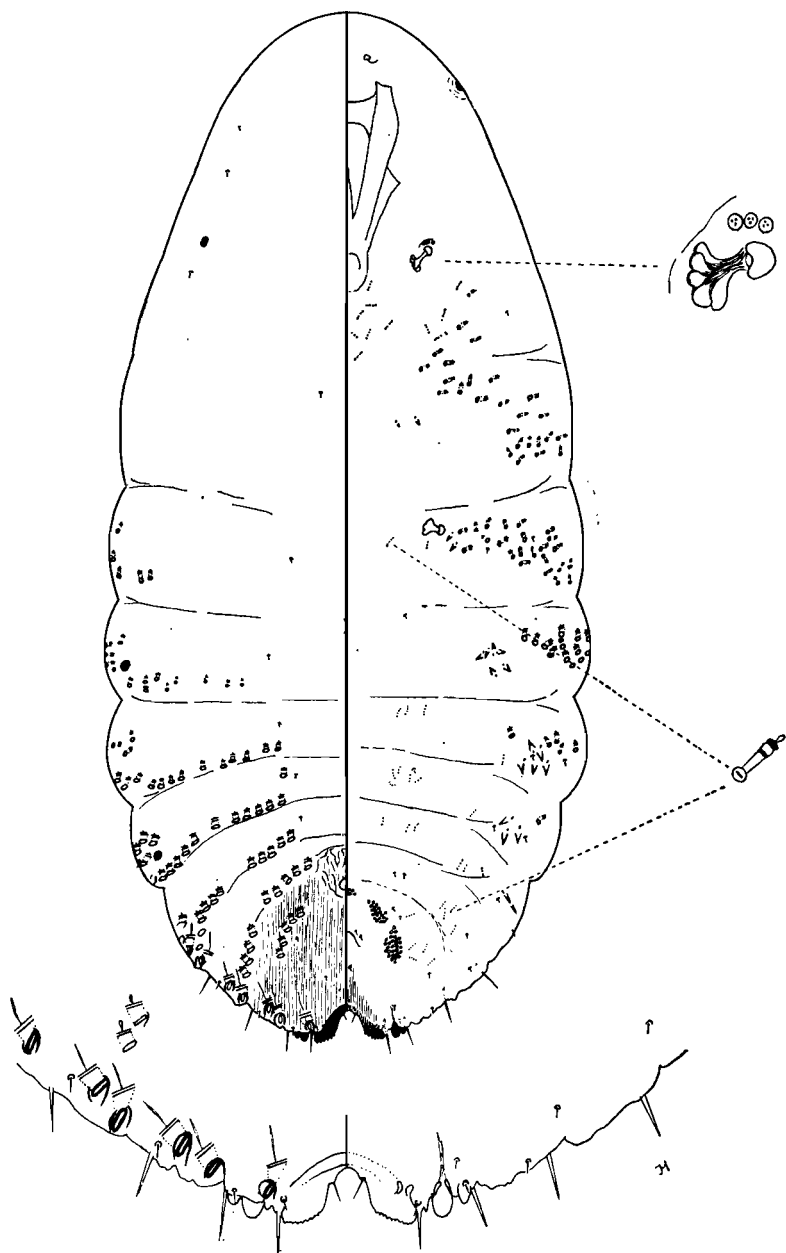


Fig. 3. *Rolaspis incisa* spec. nov.

Dorsal macroducts present in submarginal and submedian series on all abdominal segments, the submedian series in very regular, single rows; the ducts on the anterior segments smaller than those of the pygidium. On segments IV-VII there are clearly differentiated marginal macroducts which are larger than those of the submarginal and submedian series, have a longer microduct on their capitate heads, and their orifices more sclerotized; they number as follows: one to two on segment IV, two on segments V and VI, and one between the first and second lobes. Dorsal ducts on segments III-VI (excluding the clearly distinguishable marginal ducts) number as follows: III, submarginal 6-16 (11.3), submedian 3-7 (4.7); IV, submarg. 5-11 (7.9), submed. 3-7 (4.5); V, submarg. 3-8 (5.2), submed. 2-7 (4.4); VI, submarg. 0, submed. 2-7 (4.3). Perivulvar pores present in five groups: posterior laterals, 11-27 (20.8); anterior laterals, 8-20 (14.6); median 2-12 (7.5). Supplementary disc pores present or absent. Anal orifice situated towards base of pygidium.

MATERIAL EXAMINED: Pretoria (Tvl.), 30.VIII.1962 and 4.IX.1963 (H. C. 1110 and 1286). Adult ♀-holotype and 45 adult ♀-paratypes from *Diospyros whyteana* (Miern.) F. White (Ebanaceae), leg. J. Munting. Supplementary material studied but not included in the type series: Piesangkloof, P. O. Wollhuterskop (Brits Distr., Tvl.), on two host plants: twelve specimens from *Osyris lanceolata* Hotcht. ex Stend. (Santalaceae), (H. C. 1283) and twelve from *D. whyteana*, (H. C. 1284), both leg. J. Munting on 21.VIII.1963.

NOTES: Detailed measurements and counts were made from specimens 1-20 of the type series.

There seems to be some variation in the occurrence of median dorsal ducts on segments I-III, their numbers varying from one to three per segment in eleven of the type specimens but never forming a continuous median row right across the segment. In some specimens from Piesangkloof there is a continuous row of five to seven ducts but these are decidedly smaller than those of the submedian series.

In the pygidial structures *incisa* comes close to *R. lounsburyi* (Cooley) but may easily be distinguished from it by not being sclerotized at maturity, and having a deeper notch between the median lobes.

***Versiculaspis agathosmae* spec. nov., fig. 4**

Scale of adult female mytiliform, glossy white with yellow exuviae; about 1.5 mm long and usually found at the base of the leaves. Male scale elongate, white, non-carinate, somewhat dilated immediately behind the exuviae, then flattened posteriorly; about 1.2 mm long.

Mounted adult female elongate with broadly rounded pygidium; pro-soma slightly sclerotized at maturity; length 0.9-1.3 mm, width about 0.5 mm. Antennae with one to two hairs. Anterior parastigmatic pores number from 2-7 (3.5), posterior ones absent. Pygidium broadly rounded. Two pairs of lobes present: median lobes large, projecting, well separated, evenly rounded, margin regularly

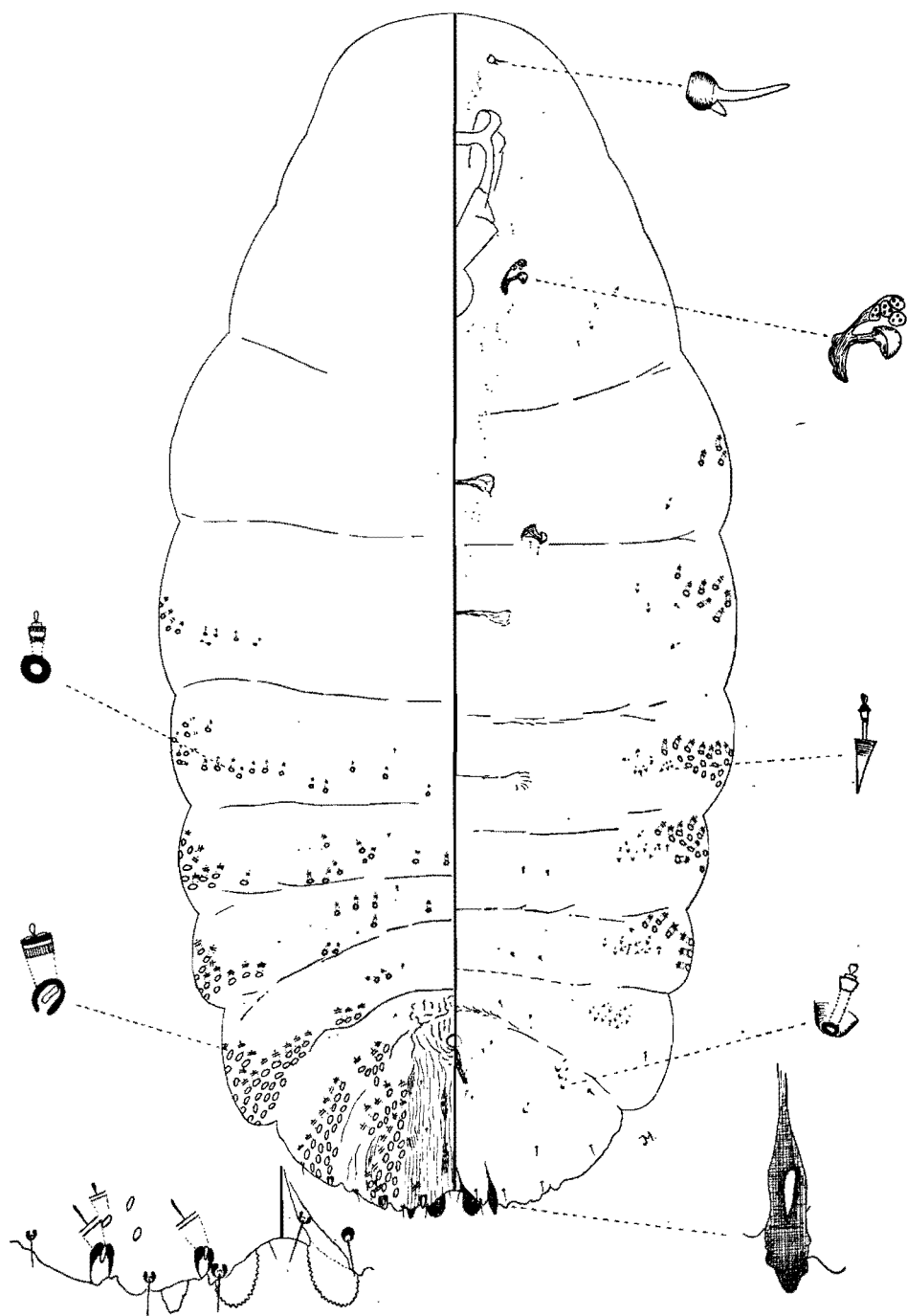


Fig 4. *Versiculaspis agathosmae* spec. nov.

and distinctly serrate; second lobes monolobulate, conical, once or twice notched on the lateral margins and with a conspicuous basal sclerosis projecting into the pygidium. Marginal setae of the pygidium very slender and inconspicuous; ventral submarginal setae relatively long ($\pm 15\mu$). Ventral gland tubercles small and occurring as follows: prothorax, 1-5 (2.7); mesothorax, 0-3 (0.97); metathorax, 1-6 (2.6); abdominal segment I, 4-9 (6.4); II, 5-11 (7.7); III, 5-14 (11.1); IV, 6-11 (8.0); those occurring on segments V-VI are somewhat modified, their shape was difficult to determine but the duct orifice is sclerotized and appears to be situated on a fleshy tubercle, they number as follows: segment V, 1-5 (3.0); VI, 0-3 (1.3). Dorsal macroducts numerous on pygidium, on segments III-V numbering as follows: III, submarg. 12-19 (15.1), submed. 0; IV, submarg. 21-31 (25.9), submed. 0-4 (1.0); V, submarg. 16-25 (21.5), submed. 5-9 (6.5); VI, submarg. 11-20 (15.9), submed. 8-19 (12.8), the submarginal and submedian groups on this segment are sometimes continuous; one duct occurs marginally between the first and second lobes. The marginal macroducts on segments IV-VII are slightly larger than the others and the microduct on their capitate head is about as long as the width of the latter. Smaller dorsal ducts are scattered across segments I-III. Perivulvar pores absent. Anal orifice towards base of pygidium.

MATERIAL EXAMINED: Cape Point Nature Reserve (C.P.), 22.V.1962 (H.C. 1147). Adult ♀-holotype and 22 adult ♀-paratypes from *Agathosma imbricata* Willd. (Rutaceae), leg. J. Munting.

NOTES: This is the second species described in this genus. It was compared with slides of *V. diosmae* (Brain) and differs from the latter in that the median lobes project from the pygidial margin, no macroducts occur on segment VII and in the presence of scattered ducts across the dorsum of segments I-III.

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